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Application Number 09/659,211

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Application of: HIRAYANAGI

Application No. 09/659,211

Filed: September 11, 2000

For: ALIGNMENT-MARK DETECTION METHODS
AND DEVICES FOR CHARGED-PARTICLE-
BEAM MICROLITHOGRAPHY, AND
MICROELECTRONIC-DEVICE
MANUFACTURING METHODS COMPRISING
SAME

Examiner: Caridad Everhart

Date: April 8, 2003

Art Unit: 2825

CERTIFICATE OF MAILING

I hereby certify that this paper and the documents referred to as being attached or enclosed herewith are being deposited with the United States Postal Service on April 8, 2003 as First Class Mail in an envelope addressed to: COMMISSIONER FOR PATENTS, WASHINGTON, D.C. 20231.


Attorney for Applicant

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AMENDMENT AND REPLY TO OFFICE ACTION

This paper is in reply to the Office action of October 8, 2002.

Please amend the subject application as follows:
In the claims:

1. (Amended) In a method for performing charged-particle-beam (CPB) microlithography of a specimen of which a surface has a crystal-lattice orientation, and an alignment mark is formed on the surface, a method for detecting a position of the alignment mark, comprising:

(a) irradiating a charged particle beam onto an area of the specimen surface having the crystal-lattice orientation but at which the alignment mark is not present, and detecting backscattered charged particles propagating from the irradiated area, so as to obtain a first backscattered-particle signal;

(b) irradiating the charged particle beam onto the alignment mark, and detecting backscattered charged particles propagating from the irradiated alignment mark, so as to obtain a second backscattered-particle signal;

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